

REMARKS

Summary

Claims 25-37 were pending and all of the claims were rejected in the present Office action. Claims 25, 35 and 36 have been amended. Claims 26, 27, and 32-34 have been cancelled. New Claim 38 has been introduced. The Applicants respectfully submit that the amendments place the application in condition for allowance.

Claim Rejections

35 U.S.C. § 103 (a)

Claims 25-35 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshikawa et al. (US 6,132,892; "Yoshikawa") in view of either Anderson et al. (US 4,661,216; "Anderson") or Omata (US 5,011,581; "Omata") and further in view of Lee et al. (US 6,346,181; "Lee") and the article entitled "Plating with Pulsed and Period-Reverse Current" by Sun et al. ("Sun") and additionally, in view of a text by Lowenheim (*Electroplating*). The Applicants respectfully submit that the Examiner has not made out a *prima facie* case of obviousness. However, the Applicants have taken the opportunity to amend Claim 25 and to cancel some claims, without prejudice, in order to expedite the issuance of a patent on a portion of the subject matter of the present application.

The Applicant notes that Lowenheim is a newly cited reference used by the Examiner to buttress an argument that the compositions claimed are merely result-effective variables. In adding this reference, the Examiner appears to tacitly concede that the "result-effective variable" reason for rejection was either not sound, or not sufficiently supported by, the references previously cited. Only pages 376 and 377 of the Lowenheim text are provided, and the statement therein cited to by the Examiner appears to be a one sentence summary paragraph with no supporting experimental or theoretical data. As presented in the Office action, the portion of Lowenheim reference used by the Examiner is clearly not enabled and does not constitute an enabled teaching. Each of the references applied in a rejection must constitute an enabled

teaching. Therefore, the Examiner has not met the burden of making out a *prima facie* case of obviousness.

Sun has been applied to teach that "pulse plating provides deposits with improved properties." Sun describes the plating of Ni on Cu, and not the preparation of a CoFe(Ni or Cr) film. The paper, which is hardly the result of routine experimentation, as it was based on an M.S. Thesis, appears to address only the hardness of a Ni film and no other conclusions were drawn by the authors. The Examiner has not explained how this would motivate a person of ordinary skill in the art to use this technique in preparation of the film of Claim 25, and to perform the specific types of experiments needed to optimize the variables. In order to optimize a variable, there must be some property or properties that are desired, and merely saying that a single non-relevant property of a single metal film was optimized in a process does not constitute a sufficient basis for the generalization made by the Examiner.

Anderson is cited to show that electroplating "is a recognized method for depositing these alloys." Anderson shows that one may use electroplating to achieve a particular cluster of resultant film properties. But these specific properties were the properties which guided the experimentation, and they are not sufficient to show that the experimentation to achieve the results described in the present application are routine. Optimizing a result first requires that a particular result be desired, and then devising a method of achieving such a desired result. It does not follow that a result that has been obtained and disclosed in the present specification is therefore necessarily obvious unless previous references can be cited to identify the result itself. That is, the "parameter optimized was not recognized to be a result-effective variable" *In re Antonie*, 559 F.2d 618,621, 195 USPQ 6, 8 (CCPA 1977)

Yoshikawa is cited to illustrate a soft magnetic film having a composition which the Examiner states overlaps the ranges of Claim 25. However, Yoshikawa does not teach a method of manufacturing (a process) involving solution plating. Yoshikawa is the primary reference and teaches a composition of matter and a method of depositing the composition. The method taught by Yokishawa is one of sputtering, which is not electroplating. Anderson is cited as teaching the use of an electroplating bath. However, nothing in Anderson teaches or suggests that an electroplating bath will yield the

resultant properties of the composition taught by Yoshikawa. As such, there is no evidence that the composition of Yoshikawa will be successfully deposited with the appropriate properties using an electroplating method. Yoshikawa, the primary reference, is likely to be rendered inoperative if such a drastic change to the method of manufacturing is attempted. If, when combined, the references "would produce a seemingly inoperative device," then they teach away from their combination. *In re Spinnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969); see also *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose).

The method of Claim 25 results in both a high saturation magnetic flux density and corrosion resistance. The resultant average roughness can be 5nm or less when the soft magnetic film is used for a lower magnetic pole layer in contact with a magnetic gap, the interface between the gap and the lower magnetic pole layer can be clearly defined, and good recording properties can be obtained. These characteristics are not described or suggested in the references.

For at least the reasons given above, the Examiner has not made out a *prima facie* case of obviousness, and Claim 25 as previously amended is allowable. However, in view of the finality of the rejection, and the economic considerations associated with continued prosecution of the application, Claim 25 has been amended to include the subject matter of Claims 27 and 34, which have been cancelled.

New Claim 38 has been introduced, which finds supporting the specification at page 47, line 20 to page 48, line 7 and a page 24, lines 1 to 8. Yoshikawa discloses that the $\text{Fe}_{90}\text{Co}_8\text{N}_2$ may have a B_s of 2.2T (Sample 6 of Table 6), but nowhere in the references is it taught or suggested that it is possible to achieve a B_s of 2.2T and a center line average roughness of 5 nm or less. Therefore, Claim 38 is allowable.

Conclusion

Claims 25, 35 and 36 have been amended. Claims 26, 27, and 32-34 have been cancelled. New Claim 38 has been introduced.

The Applicant respectfully submits that the application is in condition for allowance. The Examiner is respectfully requested to contact the undersigned in the event that a telephone interview would expedite consideration of the application.

Respectfully submitted,



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